Interpretation of Verbal Expression Sentence of Indonesian 'S-P-O-K' on Affairs of Broca Patients with Neurophyscocognitive Disorders in Medan City

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Keywords: Aphasia, Expression disorders, Indonesian Language, Neurocognitive.

Abstract: The objectives of this study were (1) to analyze Indonesian Language basic sentence patterns of Broca Aphasia patients with expression disorder, (2) to classify Neurocognitive disorders on Broca Aphasia patients. This research used Neuropsycholinguistics theory by identifying the intervention and capability of memories, productions, thoughts, meanings, and emotions which are very influential in one's speech when speaking because of Broca's broken area in the inferior frontal gyrus. It involved 5 (five) patients from University of Sumatera Utara (USU) Hospital called as AFB 1-5. The method of data collection included recording, interviewing and referring life story of the patients. In addition, classification of sentence disorder and neurocognitive of the patient were done as data analysis method in order to see the degradation of the patients' articulatory and sort out the basic sentences of expression of Indonesian language and neuropsychocognitive disorders uttered by Broca aphasia. The research found that: (1) the basic sentence patterns of Indonesian language are invalid, and (2) the neurocognitive of AFB 1-5 as memory, mind and emotion are very unique as AFB sufferers in this study are not able to put the basic sentence pattern of Indonesian Language in the correct context and speech.

1 INTRODUCTION

This research is motivated by the existence of verbal expression disorder in the form of basic sentence of Indonesian Language and Neurophyschocognitive Disorder of Broca Aphasia patient with Stroke case at University of Sumatera Utara (USU) hospital. The tendency of verbal expression disorder in forming of basic phrases patterned *Subject-Verb-Object-Complement* (S-P-O-K) and Neurophyschocognitive Disorder caused by brain dysfunction, impaired thinking, disorders in expressing speech or called Broca Aphasia. The phenomenon of language in this study is the symbolization of the idea or the only way to express the mind verbally through speech. Actually, speaking the thoughts orally or in the writings of a person is led to 5 (five) things or parameters to be followed in order to understand the elements stored, such as: (1) Speaking, (2) Hearing, (3) Repeating, (4) Reading, (5) Writing (Gustianingsih, 2016).

The speech function is closely related to the cerebral hemisphere, especially the dominant hemisphere. Nine out of ten people are right handed up to 90% of people and have dominant hemispheres on the left. The remaining of 10% is the right hemisphere. Three of the tenths is dominant in the dominant hemisphere of the right. It means that only 3% of all people is dominant hemisphere on the right and the remaining 97% and is domiciled on the left side of the brain. (Gustianingsih, 2017). Talking is a pronunciation that shows a person's uttering skills by making a sound in a word and can also be called a receptive language. Receptive language is the ability to understand what is seen and what is heard. Besides the receptive language, there are also expressive languages. The expressive language is the ability to communicate symbolically either visual (writing, marking) or audio. If there is a receptive or expressive language differ from the normal person's language, it can also be called aphasia. (Gustianingsih, 2018).

Aphasia is a disorder that occurs due to a damage from the part of the brain that takes care of the language, i.e. losing the ability to form words or losing the ability to grasp the meaning of words so that the conversation cannot take place properly.

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Afasia creates problems in spoken language (speech and understanding) and written language (reading and writing). Usually reading and writing are more disturbed than speech and understanding. Afasia can be mild or severe. The severity of the disorder depends on the magnitude and location of the damage in the brain.

Here is the illustration of the expressive disorder of Broca's Broccoli sufferer below:

Researcher: What do you do today?

AFB 1: [ma ... an .. ku .. ni ..] (ate I today) stammered pronounced

This example shows that that the formation of basic sentence is successfully produced by Broca's aphasia, but not perfect. Basic sentence that should be produced is [I ate today]. This basic sentence pattern is a DSS. Patient has uttered with [ma ... an .. ku .. ni ..] (ate I today) with PSDet pattern. The sufferer removes the pattern of information today. Patient just expressed this, and the subject pattern I expressed myself.

The disorder of this patient is very different from the normal person's speech. The question 'What did you do today?' should be answered with *'I ate today' or 'I sat today' or' I looked down the street'.* The work that focuses the question. Focus answers should keep the work done by the patient. The patient keeps saying the work done today is just "eating" nothing else. Broka Afasia sufferers, AFB-1 has deviated from the basic sentence structure agreed from Jakarta Language Center. AFB-1's answer is relevant only there are some elements that are omitted and exchanged. Cognitively AFB-1 understands the focus of the question, but he is unable to express the correct language.

Aphasia can be divided into three major parts, namely Motor Affasia (Broca), Sensory Aphasia (Wernicke), and Global Aphasia. Motor neutrality has characteristics, such as: (1) Occurring due to Broca's broken area in the inferior frontal gyrus; (2) Understanding the content of the conversation, but not being able to answer or express opinions; (3) Also Being called as Affasia Expressif or Broca's Aphasia; (4) Being able to issue 1 - 2 words (non-fluent), (Arifuddin, 2006)

Sensory aphasia possesses characteristics, such as: (1) Occurring due to damage to Wernicke's area in the superior temporal gyrus; (2) Not being understand the content of the conversation, but can issue words (fluent); (3) Also Being called as Receptive Aphasia or Afasia Wernicke. In addition, Global Aphasia has characteristics, such as: (1) Regarding Broca and Wernicke areas, (2) Not being able to understand and get words out.

USU Hospital in Medan City is a public hospital deals with Broca's aphasia from the point of psychology and neurology, but from a linguistic point, it is related to neuropsycholinguistics in which from the syntactic angle of language has never been done. This research seeks to make a valuable contribution to the management of language and psychocognitive behavior through the research of verbal expression disorder of Indonesian basic sentence on Broca's aphasia. This research also hopes to make the management of language, psychology and neurocognitive of Broca case stroke patient. This study requires special handling of linguists for linguistic, psychiatric or psychiatric management for neuropsychological therapy. The Medan city government needs to know about Broca aphasia treatment thoroughly.

2 RELATED THEORIES

2.1 Speech Disorder (Language Disorder)

Neuropsycholinguistics utilizes clinical data to uncover the mechanisms of physiology and neurophysiology that underlie language disorders and this mechanism has provided a method for assessing the internal structure of the language and speech and the underlying cerebrum mechanism. (Banret, 2007). Disorders of spoken language and written language caused by the cracking of the cerebral cortex have caused problems to be overcome by neurolinguistics and neuropsycholinguistics. The intensive collaboration between these two disciplines has successfully examined certain aphasia problems by relating them to related linguistic frameworks. In addition, this collaboration has tried to link the direct evidence of physiology to determine the localization of experimentally obtained language functions of the normally functioning brain. This neuropsycholinguistic discovery has contributed to the knowledge of the nature of aphasic phenomena and implicit language knowledge as described by linguists (Norman, 2009). This knowledge has indicated something about the psychological realities of linguistic assumptions that can embody the grammar of a particular language.

De Saussure, a linguistic figure from Sweden reveals language is social, while speaking is individual. Both these traits are interconnected. Language resides in the brain and is social in terms of ontogenesis (developmental history) and from the point of acquisition. The relationships between the

shadows of hearing and the concept are acquired by the individual as the role of the objects and the people around the individual. Everyone who learns language gets it this way. Language learning is social in terms of synchronic, whereas speech is idiosyncratic because it is determined individually. Language is natural, because it is abstract and hiding in the brain, while speaking is not natural, because it depends on the willingness and the intelectuality of the speaker.

2.2 Broca's Aphasia

This form of aphasia is named after the inventor of the part of the brain responsible for producing speech. Broca's aphasia is often called "motor afasia" to emphasize the production of disturbed language (such as speaking) while other aspects of language do not have problems. In stroke, damage to the Broca is the result of disruption of blood flowing through the blood vessels that supply this part with oxygen and nutrients. Generally, broca aphasia prevents a person from forming a clear word or phrase, but he/she still understand what others are talking about. Often, aphasic sufferers feel frustrated because they cannot get their thoughts into words. Some aphasic sufferers may say a few words, which they use to communicate in the type of speech characteristics known as telegraphic speech. Because some blood vessels that affect Broca's aphasia also carry blood to the part that controls the movement of one side of the body (usually the right side), Broca's aphasia is generally accompanied by other disorders such as hemiparesis, or hemiplegia on the right side of the body, alexia and agraphia.

2.3 Basic Indonesian Sentence Pattern

Sentence is a writing that has a minimal structure of the subject and the predicate and the final intonation shows the writing that has been equipped with meaning. Sentence element is a syntactic function consisting of subject, predicate, object, complement and description. Sentences are said to be perfect if they have at least a Subject and Predicate element. The basic sentence consists of several sentence structures formed with five sentence elements namely Subject (S), Predicate (P), Object (O), Complement (Comp), and Adverb (Adv). Based on the function and the grammatical role, there are six types of sentences that are used as the basic sentence patterns of Indonesian language, they are: 1. S-P, 2. S-P-O, 3. S-P-Comp, 4. S-P—Adv 5. S-P-O- Comp. (Djajasudarma, 2014).

3 RESULT AND DISCUSSION

3.1 Expression Disorders of Basic Indonesian Sentences on Broca's Broccoli Affected Patients

The deviation in this paper is the expression of the spoken language of a person who is not the same as a normal human being universally. This unequal form can be the existence of the elements of linguistics, elemental enhancement, the exchange of elements or elements of language that are reversed. It can be a subject element, a predicate, an object, or a description. The fact that cannot be denied that found the phenomenon of language that is far from the actual conditions. This phenomenon is present in a condition called Broca's aphasia. Broca's aphasia condition is a functional form caused by the main factor that is the process of language disorder caused by a disturbance in the human brain. Their brain is disturbed caused by many things. Disorders of the brain that resulted in a language disorder, the speech of the patient deviates from normal person talks, such as distortions expressed Broca's aphasia sufferers with mild stroke cases (AFB) below:

(2) Researchers: What did you do today?
AFB-2: nut ... nut .... ti ban ... ban ... nu ... aya ... ni ...
(was..was...hing my ...clo...thes today)

The patient actually means "washed my clothes today" which may have P-O-K pattern or P-O-(washed clothes I today) or P-O-S-K. AFB-2 stammered expressly, not smoothly and many words are not perfect. *Nut ... nut ... ti* is understood *as a wash*, then said tires *... ban ... nu ..* understood as *a shirt.* The sound [j] is expressed as [n]. My word is expressed with *aya*, missing the sound [s]. The word today is only expressed with this. If it is related to the Indonesian grammar it is in harmony with this as a determinant, whereas the word today functions as a description of time. When the expression of uttered by AFB-2 is viewed, it is very different as it has been studied. Khon (2009) said that almost all the writings on Broca's Aphasic suggest a non-fluent or faltering language form, but the language is not reversed. In this case, the language is reversed, as illustrated in the sentence (3)

(3) Researcher: Kemanakah Bapak pagi ini?
(*Where did you go this morning?)*
AFB-3: Rok ..rok ....kok... bel ... bel ... lik.. tad ... tad..di..ku .. (rokok belik tadi aku) to declare *"aku membeli rokok tadi pagi"* (I bought cigarettes this

morning) . AFB-3 is only able to express the sentence with *rokok belik tadi aku* previously patterned O P K S. This sentence patter is never expressed by normal people. This morning should have appeared in AFB-3, but AFB-3 was only able to express earlier, said morning lost or did not appear. In contrast to AFB-2 and 3 in expressing basic Indonesian sentences. AFB-4 is able to express its sentences without having to backtrack, but still stumbles and eliminates important elements in the sentence, such as [di].

(4) Researcher: di rumah sakit ini, Ibu dijaga siapa?
AF B-4: [ib..ib..bu ... jag ... jag ... ga..an ... an..nak.] (*Ibu jaga anak)*.
AFB-4 is also stammered in expressing the basic sentence. [*Ibu jaga anak*]. " I take care of the children" with (S-P-O) pattern.

Judging from the above conversation, that the formation of basic sentences is successfully expressed by AFB-4 patients, but it is not perfect. The basic sentence that should be expressed [*Ibu dijaga anak di rumah sakit ini*], but AFB-4 expresses with [*Ibu jaga anak*] (*Ibu dijaga anak*). This basic sentence pattern is SP O. Patient has expressed with SP O. AFB pattern -4 has omitted the element [di], thus changing the meaning contained in the sentence The patient intends to express *Ibu dijaga oleh anak,* but it means turning into *Ibu yang menjaga anaknya. Ibu* as /S/ (Subject)" Doer". In this case it seems as if *the child is sick* and *guarded by the mother*. AFB-4 understands what is being asked, but she is unable to express the perfect and correct language according to the universal rules and understandings of the Indonesian language.

Exactly what the experts say about Motoric Aphasic: (1) Occurs due to Broca's brokenness in the inferior frontal gyrus (2) Understand the content of the conversation, but can not answer or express opinions (3) Also called Aphasic Expressif or Broca's Aphasia (4) Can issue 1-2 words (nonfluent). [9]

(5) Researcher: Apakah Bapak masih ingat, Apakah pendidikan terakhir Bapak?
AFB-4: (shaked his head .... *sed ... sed .... sede ... ku ni..on* (head shake ..... *aku SD. Aku ini tahun*) means that his last education is only elementary school. Structurally, the expression of AFB-5 is also not the same as the actual Indonesian language structure. Patients express basic sentences with their own patterns, based on their thoughts with pattern *PSK*. When viewed from the Indonesian language structure that applies universally "Shaking my head, *Aku sekolah SD tahun ini*". This sufferer also expresses disjointed, incomplete and reversed basic sentences, and uses nonverbal expressions as well to *shake his head* meaning "do not remember". Expressive of the basic cues proposed in this study is very different from previous studies, the language is discontinuous and many elements are wiped out and flipped through the language.

3.2 Neurocognitive and Psychocognitive Disorders Broca's Aphasic Affected to Cognitive

Neurology and cognitive psychology called neurocognitive and psychocognitive are two branches in neurology and psychology that attempt to examine the cognitive processes of human behavior scientifically. Neurocognitive is used to assess neurological relationships with human language processes. Psychocognitive is used to examine the psychological relationships of 'science that examine universal human's behaviour and linguistics as part of a scientific sciences that examines language behaviors that can ultimately be called cognitive psycholinguistics, psychology studies linguistics and human cognitive processes in the study of language behavior. What is meant by cognitive processes, is the mental processes, thoughts, motivations, and emotional human in regulating human experience and behavior and language behavior. The things that are mainly studied in cognitive psychology are how people cultivate, interpret, organize, store, exclude and use their knowledge, including the development and use of language knowledge.

Neuropsycholinguistics applies linguistic, psychological, and neurological knowledge and language problems, such as language teaching, language learning, pre-reading and advanced reading, bilingualism, grammar, speech-related, such as aphasia, stuttering, autism, brain stroke and communication problems, language and thought relationships, dialect problems, pidginization and creolization and other social issues involving language, such as language and education, language and nation-building. Neuropsycholinguistics is an interdisciplinary science born as a result of one consciousness, that language study is so difficult and complicated that a single discipline alone is unlikely to be able to study and explain the essence of language. So, basically Neuropsycholinguistics is a combination or cooperation between neurolinguistik and neuropsychology. What if there is a neurocognitive and psychocognitive disorder in expressing basic Indonesian sentences (Nagai, 2007).

3.2.1 Motivational Disorder

Motivation AFB 1-5 also deviates, because it is Broca aphasia suffered by these sufferers eliminate the motivation to speak to anyone, if not talked to them at all silent. After being talked to also have no motivation to create new words, always repeat the vocabulary delivered by others but also circling and back and forth. AFB1-5 cannot remember the sequence of words logically to be communicated to others. In addition to sputtering and unclear articulation, AFB does not have expression in speech and usually ordinary people do not understand this patient's speech, as shown in the data (1-5).

3.2.2 Memory Disorders

American psychologists, arguing about memory as the most extraordinary phenomenon of the brain, sensory experiences, perceptions of action to change feel and remember, understand and decide (Khon, 2009).

When viewed from the results of interviews with researchers with the patient, views, perceptions, curiosity will something, remember something, and decide something has been heavy disturbed. AFB1-5 never shows a high curiosity about the information, surrounding circumstances, and views about itself and others. This never happens when they have not had a stroke. The most basic evidence there is no difference AFB-1 answers to different questions. As researchers, long-term memory and short-term AFB-1 can be said to be disturbed. AFB- understands what's specifically asked "about eating", not food, so answers are the same for different questions. "Eating" and "food" must be different or different. Here's an illustration of his speech.

Researchers: Do you still remember your favorite food?

AFB-1: *nat .... nat ... ti .... la ... maaa .... an.* (*Nasilah makan)*

Short-term memory is the retention and acquisition of new information in seconds, minutes, hours, and days. Also called working memory, primary memory, and direct memory that includes remembering and holding new information, as well as information previously understood by the patient in a formal or informal manner.

Long-term memory, also known as memory of something such as counting, vocabulary or sentence in large and permanent quantities in the human brain. George Miller, a print researcher of cognitive and memory psychology, any human being who can store words in large quantities, more number of letters stored and recalled, pieces of information that are accommodated by short-term memory and sent easily into the run long. humans will have no problem recalling a 14-word sentence like "*the wicked old witch led the two trusting children into the deep dark forest*." Through word memories with very fast speed, 10 words per second. [Nagai, 2007].

Based on the definition of short-term and long-term memory, AFB1-5 is already disturbed as well. Patients cannot remember perfectly both long-term memory and short-term memory, have no motivation and creativity in speaking. Patients will not greet people first, but they wait to be addressed.

4 CONCLUSIONS

Basic sentences of Indonesian language can be expressed by Broca sufferers with stammer, yet it is not smooth. Many expressions are expressed in reverse, but there is also a missing language element that gives rise to a new meaning. The pattern that goes down is not the same as the normal person's sentence pattern in general.

Neurocognitive and psychocognitive also deviate from normal references. Stroke patients in this study were unable to recall information ever before they were exposed to a stroke, when speaking expressionlessly, his face flat. FB1-5 never started the conversation, never greeted first, but waited to be addressed.

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